

# KLAY-INSTRUMENTS



**"ALL STAINLESS"**

**PRESSURE AND  
LEVEL TRANSMITTERS**

## LEVEL TRANSMITTERS

For level measurement on all kind of fluids, pastes and sludges, both the series 8000-SAN (conventional) and series 2000-SAN ("Intelligent" transmitters) can be used. Both series can be delivered with many different process connections (more than 60) for all kind of industries, like food and beverage, pulp and paper, pharmaceutical, water and waste water, oil and gas, marine/ shipbuilding, etc.


All our transmitters are fully **temperature compensated** and have strong flush mounted diaphragms.

*"We can offer the right transmitter for each application".*



### FEATURES

"Conventional" series 8000-SAN

- ✓ ALL STAINLESS STEEL DESIGN
- ✓ ZERO/SPAN ADJUSTABLE
- ✓ ACCURACY 0,2%
- ✓ WIDE RANGEABILITY
- ✓ STRONG DIAPHRAGMS
- ✓ MANY PROCESS CONNECTIONS
- ✓ INTRINSICALLY SAFE  
ATEX  II 1G Ex ia IIC T4



### FEATURES

"Intelligent" series 2000-SAN

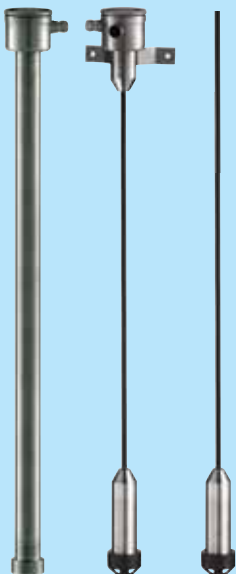
- ✓ EASY CALIBRATION WITHOUT TEST PRESSURE  
BY 3 PUSH BUTTONS
- ✓ ACCURACY 0,1%
- ✓ "ALL STAINLESS" DESIGN
- ✓ DTM / FDT CERTIFIED
- ✓ ADJUSTABLE DAMPING
- ✓ HART® PROTOCOL
- ✓ PROFIBUS-PA



## SUBMERSIBLE LEVEL TRANSMITTERS

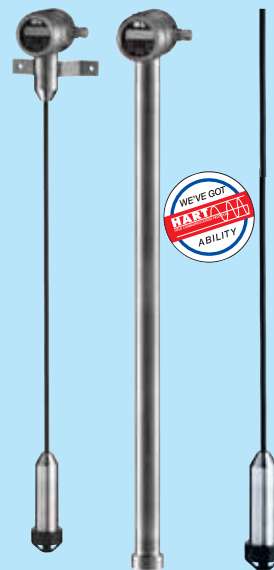
### HYDROBAR

### HYDROBAR "S" or "I"



Series Hydrobar (conventional)

Klay Instruments offers a wide range of submersible leveltransmitters with cable or stainless steel tube extension. The conventional Hydrobar series can be delivered in a cable execution with a "Fixed range" or with adjustable zero and span. Both the conventional and "Intelligent" Hydrobar "S" series are always equipped with a strong flush mounted diaphragm and a diaphragm protection cap. All Hydrobar transmitters are fully temperature compensated and have a **perfect long term stability**. The Hydrobar leveltransmitters can be used for a lot of applications in the water and waste water industry, pulp and paper, marine/shipbuilding and many other industries. The "Intelligent" Hydrobar "S" series are standard equipped with a local display and three push buttons for calibration. Zero and span can be calibrated very easily without test pressure.



"Intelligent" Series 2000 Hydrobar "S"

Series 2000 Hydrobar "I"



## PRESSURE TRANSMITTERS



The "Peramic" is a solid state pressure transmitter based on a **ceramic pressure cell** which can withstand high overpressures. The "Peramic" can be used for all pressure applications in liquids, gases and vapours. Available process connections are G 1/2" (1/2" BSP) or 1/2" NPT. Ranges are available from 0,2 bar to 350 bar. The Peramic is also available in an "Intelligent" version, the Peramic "S" (see right side).



### FEATURES PERAMIC®

Conventional pressure transmitter CER-8000

- ✓ CERAMIC DIAPHRAGM
  - ✓ ACCURACY 0,2%
  - ✓ ZERO/SPAN ADJUSTABLE
  - ✓ HIGH OVERPRESSURES
  - ✓ INTRINSICALLY SAFE
- ATEX II 1G Ex ia IIC T4

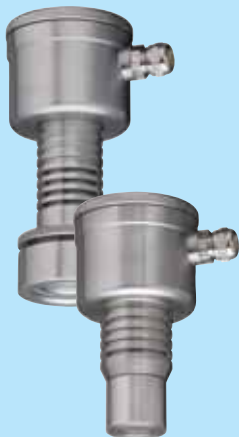
### FEATURES PERAMIC "S"

"Intelligent" pressure transmitter CER-2000

- ✓ CERAMIC DIAPHRAGM
  - ✓ **EASY CALIBRATION WITHOUT TESTPRESSURE**
  - ✓ ACCURACY 0,1%
  - ✓ HIGH OVERPRESSURES
  - ✓ ADJUSTABLE DAMPING
  - ✓ HART® PROTOCOL
  - ✓ DTM / FDT CERTIFIED
  - ✓ INTRINSICALLY SAFE
- ATEX II 1G Ex ia IIC T4



All our "intelligent" series 2000 transmitters can be calibrated very easily without testpressure, by 3 pushbuttons and with a Hand Held Terminal or PC.



## PRESSURE TRANSMITTERS

with flush mounted diaphragms

For pressure measurement on sticky fluids where a flush mounted diaphragm is necessary, we offer a wide range of pressure transmitters. All kind of process connections are available for many industries. A special range is designed for the pulp and paper industry. The transmitters are rugged and compact. "All stainless" with strong flush mounted diaphragms which can withstand high overpressures.

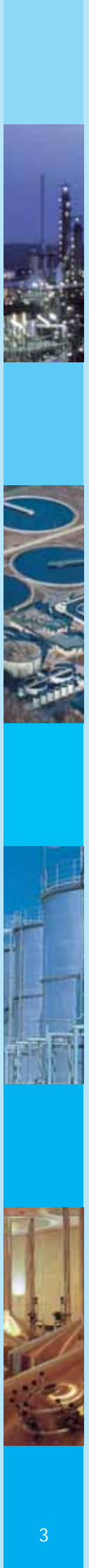


Conventional series 8000

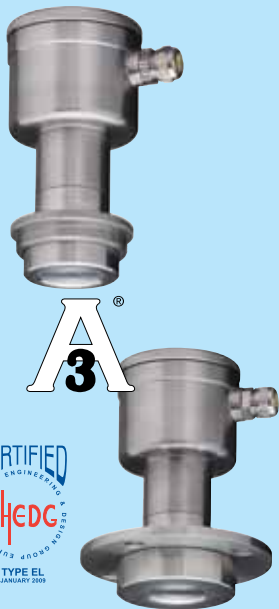
### FEATURES

"Intelligent" series 2000

- ✓ STRONG DIAPHRAGMS
- ✓ ACCURACY 0,1%
- ✓ ADJUSTABLE ZERO/SPAN
- ✓ WIDE RANGEABILITY
- ✓ "ALL STAINLESS STEEL"
- ✓ HART® PROTOCOL
- ✓ DTM / FDT CERTIFIED



# FOOD/DAIRY/BEVERAGE INDUSTRY



Both the conventional series 8000-SAN and the "Intelligent" series 2000-SAN are designed to measure pressure and level in the Food, Dairy, Beverage and Brewing industries, and the pharmaceutical industry. They are "all stainless" and capable for CIP and SIP cleaning operations. The transmitters are fully temperature compensated. All hygienic process connections are available, a lot of them are according to the EHEDG and 3A approvals.



## FEATURES

Conventional series 8000-SAN

- ✓ ALL STAINLESS STEEL DESIGN
- ✓ HYGIENIC PROCESS CONNECTIONS ACCORDING TO EHEDG AND 3A
- ✓ ACCURACY 0,2%
- ✓ ZERO/SPAN ADJUSTABLE
- ✓ TEMPERATURE COMPENSATED

## FEATURES

"Intelligent" series 2000-SAN

- ✓ EASY CALIBRATION WITHOUT TEST PRESSURE BY 3 PUSH BUTTONS
- ✓ ACCURACY 0,1%
- ✓ "ALL STAINLESS DESIGN"
- ✓ HYGIENIC PROCESS CONNECTIONS
- ✓ TEMPERATURE READ OUT
- ✓ EASY TANK LINEARISATION
- ✓ PROFIBUS-PA (option)

## SPECIALIST IN "SPECIALS"

The most creative constructions of pressure and level transmitters are already made by us. Some of them have become a standard now, like the 3 executions below. If you ever have a special process connection and you need to replace this existing transmitter, do not forget to ask the "specialist in specials".



### SERIES 8000-SAN-HT

For **high temperature** applications we manufacture the series 8000-SAN with special cooling fins or with separated electronics.

Max. process temperature 280 °C.



### SERIES 8000-SAN-EXTD

The series 8000-SAN-EXTD are flange mounted level transmitters with an extended diaphragm. The extension length and diameter must be specified, always refer to our drawing no. 8000-61. The technical specifications are equal to the series 8000 mentioned in this brochure (also available in series 2000).



### SERIES 8000-VALVE

The series 8000-VALVE permits **flush** installation of the diaphragm and a transmitter that can be removed **without** shutting down the process.

A detailed brochure is available.

\* All above mentioned specials are also available in series 2000



# THE COMPANY KLAY INSTRUMENTS



Klay Instruments b.v. is an ISO 9001:2008 certified company who develops and manufactures a wide range of electronic Pressure and Level transmitters, "Intelligent" transmitters with HART® protocol or Profibus PA and pressure and level switches. All instruments are designed and manufactured in our factory in Dwingeloo, The Netherlands. Klay Instruments has a world wide service and sales distribution network.

## RESEARCH & DEVELOPMENT

The research & development department consists of both an electronic and a mechanical department. All electronics are developed "in the house". After the series 8000 we have developed the "Intelligent" series 2000 with the HART® protocol and PROFIBUS-PA output. Some new development projects have started recently. On the mechanical side we are developing many special processconnections for special applications "custom made".

## STAINLESS STEEL ELECTRONIC HOUSINGS

Klay Instruments was one of the first instrumentation manufacturers world wide who delivered a **stainless steel electronic housing as standard**. All our pressure and level transmitters are only available with stainless steel electronic housings which have a very compact and rugged design.

## MANUFACTURING DIAPHRAGMS

All transmitters from both the series 8000 and 2000 have strong flush mounted diaphragms. All diaphragms are laser welded and Helium leak tested. Available diaphragm materials are SS316L (standard), Hasteloy C, Tantalum, Ceramic or Gold plated.

## TEMPERATURE COMPENSATION AND CALIBRATION

All our pressure and level transmitters of both the conventional series 8000 and the "Intelligent" series 2000 are **always complete temperature compensated**. A temperature sensor, which monitors the process temperature, is mounted directly behind the diaphragm. The output of this sensor is used to compensate temperature variations in order to have a very accurate and stable output of the transmitter.



Factory in Dwingeloo, The Netherlands.



Laser welding of diaphragms.



**FlushDiaphragmTechnology**

Unique Klay Flush Diaphragm Technology



Active temperature compensation of all transmitters.



Klay Instruments has a world wide sales and distribution network in more than 45 countries. Please ask for your local representative, there will always be one in your area.

## BROCHURES

Detailed technical brochures are available from all described instruments. Please do not hesitate to contact us for more information.



## APPROVALS

A lot of approvals/certificates are available for several transmitters and industries.

If you require an approval/certificate which is not mentioned, please contact us.

For example:

- Intrinsically safe ATEX  II 1G Ex ia IIC T4
- HART® protocol 
- FDT CERTIFIED 
- 3A Sanitary Standard and EHEDG (Food & Beverage)
- Lloyd's register, DNV, BV, GL, RINA (Marine/Shipbuilding)



Made by:

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